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Started on	Wednesday, 25 February 2026, 11:19 AM
Completed on	Wednesday, 25 February 2026, 11:19 AM
Time taken	15 secs
Grade	0 out of a maximum of 10 (0%)

- 1** A random variable has a mean of 7 and coefficient of variation of 7. The third raw moment is 1520. Determine the skewness. _____

Marks: 1

Answer:

X[Make comment or override grade](#)

Incorrect

Correct answer: -0.418567

Marks for this submission: 0/1.

- 2** Claim severity has the following distribution:

Marks: 1

Claim Size	110.0	115.5	121.0	126.5	132.0
Probability	0.54	0.29	0.15	0.00	0.02

Determine the distribution's Skewness. _____

Answer:

X[Make comment or override grade](#)

Incorrect

Correct answer: 1.414816

Marks for this submission: 0/1.

- 3** Liability claim severity follows a Pareto distribution with mean of 600 and parameter $\alpha = 4$. If inflation increases all claims by 5%, the probability of a claim exceeding 247 increases by what

Marks: 1

amount? _____

Answer:

X

[Make comment or override grade](#)

Incorrect

Correct answer: 0.013942

Marks for this submission: 0/1.

4 An insurance loss is being modeled as a continuous two-spliced distribution as follows:

Marks: 1

$$f_X(x) = c_1 e^{-x/500}, 0 < x < 500$$

$$= c_2 e^{-x/5000}, x \geq 500$$

Calculate the average loss. _____

Answer:

X

[Make comment or override grade](#)

Incorrect

Correct answer: 4758.163238

Marks for this submission: 0/1.

5 Losses for a line of insurance follow a Pareto distribution with $\theta = 3,680$ and $\alpha = 4.2$. An insurer

Marks: 1 sell policy that pay 100% of each loss up to 7,000. The next year the insurer changes the policy terms so that it will pay 78% of each loss after applying a 350 deductible. The 7,000 limit continues to apply to the original loss amount. That is, the insurer will pay 78% of the loss amount between 350 and 6,650. Inflation will be 2.7%. Calculate the percent decrease(i.e. in hundred not decimal) in the insurer's expected payment per loss. _____

Answer:

X

[Make comment or override grade](#)

Incorrect

Correct answer: 40.82

Marks for this submission: 0/1.

6 Let X be a discrete random variable with probability generating function

$$P_X(z) = 0.33z^{160} + 0.27z^{480} + 0.24z^{800} + 0.10z^{1120} + 0.06z^{1440}$$

Calculate the mean excess loss, $e(900)$. _____

Answer:

X

[Make comment or override grade](#)

Incorrect

Correct answer: 340

Marks for this submission: 0/1.

7 Suppose $X \sim N(\mu = 190, \sigma^2 = 1,444)$, calculate $E[(X - 114)_+]$. _____

Marks: 1

Answer:

X

[Make comment or override grade](#)

Incorrect

Correct answer: 76.32

Marks for this submission: 0/1.

8 A loss, X , follows a Pareto distribution with $a = 7$ and unspecified parameter θ . You are given:

$$E[X - 928|X > 928] = 2E[X-109|X > 109].$$

Marks: 1

Calculate $E[X - 2,410|X > 2,410]$. _____

Answer:

X

[Make comment or override grade](#)

Incorrect

Correct answer: 520

Marks for this submission: 0/1.

9 You are given:

Marks: 1

- The coverage limit is 14,000.
- The expected value of the loss before considering the coverage limit is 9,730.
- The probability of a claim for 14,000 or more is 0.16.
- The mean excess loss at 14,000 is 21,310.

Determine the average claim paid less than 14,000. _____

Answer:

X

[Make comment or override grade](#)

Incorrect

Correct answer: 4857.619048

Marks for this submission: 0/1.

10 You are given the following information:

Marks: 1

- The amount of an individual claim has an exponential distribution with mean λ
- The parameter λ has a probability density function given by:
$$\pi(\lambda) = K \lambda^{-4} e^{-35/\lambda}, \lambda > 0$$
where K is a constant.

Determine the expected claim size greater than 35. _____

Answer:

X

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Incorrect

Correct answer: 70

Marks for this submission: 0/1.

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